Tokyo PC
Newsletter

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8th Year
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```
Microsoft(R) MS-DOS(R) Version 5.00.409c
             (C)Copyright Microsoft Corp 1981-1990.

C:\>mem

    655360 bytes total conventional memory
    655360 bytes available to MS-DOS
    623888 largest executable program size

  16056320 bytes total EMS memory
  13221888 bytes free EMS memory

  15728640 bytes total contiguous extended memory
         0 bytes available contiguous extended memory
  10403840 bytes available XMS memory
           MS-DOS resident in High Memory Area
```

Japan's largest MS-DOS 5.0 Users Group

Tokyo PC Newsletter

Since 1984

TPC USERS GROUP
Central P.O. Box 1145,
Tokyo 100-91, Japan
TPC BBS (03) 3997-3444
300/1200/2400/9600 8/N/1

Information hotline for prospective members:
(03) 5706-0057

The club meeting is held on the first Thursday of each month at the Tokyo Union Church between Omote-Sando Station and Harajuku Station, starting from 6 p.m.

The TPC Sages

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TPC Tenth Anniversary Barbecue & Pool Party

Date:Saturday, August 10, 1991 Time: 6:00 p.m.
Place:Jewish Community Center in Hiroo (maps will be available at the July and August meetings)
Price: ¥5,000 for members and guests, ¥4,000 for children
Space is limited, so reservations are necessary.
For reservations, please call Sue Winski at 3714-4448, Bruce Pierce at 5567-1745, or Melinda Hull at 3393-3155.

Sez the Prez

What is a BBS? TPC has one, lovingly called "The Board". What's it for, what's its purpose? Ask ten different people and you get ten different answers. What's my answer? I see the BBS as a magic tool. An electronic gathering place, a focal point for the accumulated knowledge of users. I see problem-solving as a major function of TPC's BBS. Suppose I have a problem with my computer. I call the BBS and write an explanation of the problem. A day or two later, I check the BBS and chances are that answers have come "out of thin air". This makes the BBS an organic system that consists of high tech (the hardware and software) and a mindset (the willingness of people to help other people).

What are the topics of discussion? Computer-related matters are present of course, but there are also conferences on Indian restaurants in Tokyo, hotels in Hong Kong, items for sale or rent, info on events, poems, harangues, you name it. Discussions can last for days or weeks, or they can fizzle out if not enough people are interested in keeping it going.

Some people advocate "seeding" controversial or stimulating topics to make the board more "active". I prefer a mostly hands-off approach. Let's trust users to make the board what they want it to be. TPC's responsibility is to keep the BBS working, insure the integrity of the system, and make

sure users get the assistance they need to be able to use it fully.

As TPC grows and evolves, so does the BBS. We now need to find a more permanent home for the BBS. Most of the duties of sysoping can be done from remote locations, and we wouldn't have to change the phone number when a new sysop takes office. What we need is a closet or tabletop in a secure space that is physically accessible in time of emergency. This space would ideally be in Tokyo so the majority of members can make a local call, and would be either free or reasonably low rent. Please contact me with your offers and/or ideas.

Sue Winski

June Meeting

Music has the power to soothe the savage breast—even when it's generated from behind a C: prompt. And at the hands of a skilled team (with the necessary sofuto and haado) under the baton of smiling Martin Bruczkowski, the personal computer can shine as a most-valued-player in the music-making process.

The evening commenced with Kazuko Bruczkowski, dazzling spouse of the master of ceremonies. Kazuko is an accomplished pianist who could probably whip magnificent music from a toothbrush. Her performance established that an instrument, be it a computer or a hangnail, can merely assist the musician in the production or performance of his art. The demonstration continued with jazz great Thomas Scherer accompanied by an accomplished yet diminutive drummer. Tom used a synthesizer to compose and play several lines of a piece, and left it to computer-musician whiz Dietmar Mondon, TPC's very own Mozart of Midi, to join the separate elements into a piece of music. Thus at the June meeting, the TPC club was transformed from the usual evening of howls of banter and ravings into a concert performance that moved the audience to cheers, and even a few tears. Many the savage breast was soothed that night, and a few heads came away enlightened.

The computer's role in music making is not limited to joining separate lines, or even to editing—under Dietmar's skilled fingers a Toshiba laptop proved capable of correcting Kazuko's intentional mistake—the computer can modify the character of tones, adding or subtracting or modifying the many subtle components of sound that becomes music to our ears.

How this is accomplished remains, alas (or thank God), the mystery it has always been. Lots of cables are required for connecting lots of black boxes called equalizers, amps, sound boxes and the like (the boxes must be black and full of holes for the music to come out right) and while aficionados say the necessary equipment can be obtained second-hand quite cheaply, it looks pretty costly when all assembled. As for the sounds: Nice. But as the combined performances demonstrated, music is made by talented people, not black boxes or keyboards or LCD displays. Luckily our club is rich in people. ❑

Disk O' the Month

by Joseph Kaye

Screen Saver 2.0, a screen blanker, allows you to set the interval—no big deal, but some programs don't. It also permits screen blanking on demand, again no big deal, but add them together. It has two other useful features: you can turn it off without rebooting, and when the screen is blanked a clock showing the current time bounces around the screen. It's not perfect: blanking on demand takes place by pressing ALT-B, which invokes functions in Telix and PC-Write. The program comes in two versions, Vidsave for EGA/VGA, and Monsave for MDA and CGA.

The disk also contains Automaxx (a menuing system) and the updated version of the PC-Magazine utilities. These little programs can be a lot of help.

The final program is a style checker called Critic. A style checker basically goes through a text file, and then gives hints on how to improve it, finds repeated words, gives information on word length and use, and various other data useful to a writer.

VGA/EGA Games #1 has been revised and updated, and may become a permanent disk. PC-Write (a shareware word processor program comparable to WordPerfect) will also be on sale. Plus a new version of the virus checkers, an update to last month's disk. Virus checkers are like medical checkups and fire extinguishers—you need them.

At this time, I wish to extend a few words of thanks: to Heinz Ito for getting the PC Magazine utilities; to Patrick Hochner for allowing me to download Fractint and other programs; to Peter Evans for many ideas on content; to Chris Case for ideas, encouragement, calls saying "We're putting the newsletter together today, where's the article?", and the original idea of the DOM column; Martin Bruczkowski for much help in getting the DOMs off and flying; and Ed Zawlocki for having a high speed modem and much willingness to help. Thanks are due to lots of other people, too many to name here. And to all of you who buy the disks.

Addendum: I will be leaving Japan for the U.K. on July 17, so the July meeting will be my last. I'll try to keep in touch. I plan to start a BBS in the U.K. running WWIV in a link up with WWIV-NET_J(e), the English-language WWIV network in Japan, currently hooking up SMBBS, TFA, and ASIJ BBS. ❑

D(e a)R DOS:

by Bernd Nürnberger

For executives and other lovers of summaries: After using it for almost two weeks, I like DRDOS 5.0 (which identifies to applications as DOS 3.31) and do not feel like going "back" to MS-DOS 4.01. My 386SX with 4 MB of RAM now has about 50 kB more free base memory, all the same with mouse, cache, and command history. No need for an expanded memory manager (about $60), CED command history (needs 16 kB), and my collection of configuration files to make Framework and Windows run at their best.

The user license is of the "book" type: only to one person at a time, regardless of number of machines. This adds to the value DRDOS provides: at less than half of their cost, definitely more than two copies of usual DOS and the assortment of little add-ons.

INFOWORLD did a complete review of DRDOS in their 1991 May 27 issue.

Using the Documentation

User Guide

The DRDOS User Guide is much more readable than the usual DOS manuals which frequently fail to mention the basics in the beginning and how settings interact and where to find further detail. I admit, though, that some years of using and cursing DOS manuals shaped my attitude and taught me where to look for my information. Now I know most of the buzzwords, so I can understand what the author of the manual wants to tell his readers. The DRDOS manuals were thus a pleasant surprise to me, easy to read and with sufficient examples.

A famous philosopher once defined intelligence as "the ability to assign relative importance". I found the DRDOS manual helpful in this aspect. The preface explains the manual itself and briefly touches on new features of DRDOS. It mentions the *INSTALL* program, which promptly fooled me when I invoked it while my computer was running. *INSTALL* wants to see DRDOS running, so I had to boot from the DRDOS floppy disk. The manual mentions this later on, but I jumped at the action after just having read "Installing DRDOS is straightforward...". I was not patient enough to read down all the page.

I consider the manual helpful for beginners, because it explains in fairly simple English all the buzzwords of computerese. It contains a number of indexes and a glossary which make using DRDOS easy. For those who know their old DOS well, many DRDOS commands show a list of command options when invoked with the /h parameter.

One suggestion to the authors of the manual: I was confused by the sort order in chapter 9 (Customizing your System) which deals with the commands you put into CONFIG.SYS. Whereas the DOS command section has a running header telling the command the page belongs to, this aid is missing in the customizing section. I was looking for the description of HIDOS and this sequence threw me off:

9.3 Config.sys commands

BREAK, BUFFERS, CHAIN, COUNTRY, DEVICE, DRIVPARM, ECHO, FASTOPEN, FCBS, FILES, HIDEVICE, HIDOS, HIINSTALL, HISTORY, INSTALL, LASTDRIVE, SHELL

9.4 Installable DRDOS device drivers

ANSI.SYS, CACHE.EXE, DISPLAY.SYS, DRIVER.SYS, EMM368.SYS, EMMXMA.SYS, HIDOS.SYS, PRINTER.SYS, VDISK.SYS

All this under the header "DRDOS User Guide 9: Customizing your system". Authors, please improve this, and give the book a ring binder which will stay open on the desk.

Release Notes

The Release Notes supplement the other documentation, and contain brief instructions on how to install DRDOS and configure it for maximum memory and performance. This information and one feature (explained later) of DRDOS were very helpful because I use *Windows, Framework,* and memory-hungry simulators, all of which don't run well or not at all with another's setup. Especially, *Windows 3.0* wants to control everything by itself. For example, if I want to use my trackball for other DOS applications, I must have the mouse driver installed. *Windows* accepts the same trackball on the same port, but only when its driver is not loaded.

Under MS-DOS 4.01, I kept pairs of CONFIG.??? and AUTOEXEC.??? files in a separate SYS directory. I needed these to relieve RAM cram and tune the PC for better performance. If I wanted to boot up in a different configuration, I copied the two desired files to the root directory, overwriting the previous ones, and then rebooted the machine. Whenever I installed new features in my system, I had to modify a number of configuration files.

DRDOS allows you to easily control the configuration at boot time, because one CONFIG.SYS does it all with a structure like a batch file. My CONFIG.SYS now looks like this:

```
SHELL=C:\COMMAND.COM C:\ /P /E:256
BREAK=ON
BUFFERS=8
FILES=20
FCBS=0,0
STACKS=0,0
FASTOPEN=128
LASTDRIVE=C
HISTORY=ON, 256, OFF
COUNTRY=081,,C:\DRDOS\COUNTRY.SYS
?" configure for Windows 3.0 [Y/N] ? "
GOTO WIN3
REM         DRDOS drivers
DEVICE=\DRDOS\EMM386.SYS /F=AUTO /K=1024
/B=AUTO /R=AUTO
HIDOS=ON
HIDEVICE=\DRDOS\CACHE.EXE /S=2048 /E
HIDEVICE=\SYS\MOUSE\MSCMOUSE.SYS /A8
GOTO COMMON
:WIN3
REM         WINDOWS drivers
device=\win\himem.sys
device=\drdos\hidos.sys
hidos=on
device=\win\smartdrv.sys 2048 256
:COMMON
```

Certain DRDOS features work somewhat differently from our common DOS. *FASTOPEN* is stated, not installed; and its parameter is the buffer size, not the number of file names it tracks.

I use a 40 MB hard disk as a single drive. DOS 4.01 required *SHARE*, which used 6 kB of memory. DRDOS goes fine without that.

HIDOS and HIDEVICE load the DOS kernel (32k) and devices into high memory, freeing the space in base memory for applications.

DRDOS supports COUNTRY=081, which displays the date in the only logical format on this planet, the Japanese format with the Christian figure for the year. Today is 1991-06-13, at least in writing. I find any other way awkward, be it German dd.mm.yyyy or even worse, U.S. American mm/dd/yyyy. The Japanese date has the high digits first, just like numbers have. Therefore, it is sortable, even when entered as text in a database. Our language is the sole reason for keeping the date format as it is. How would you say "Today is 1991-06-13"?

The key to DRDOS' flexibility is the batch-like structure, such as REM and GOTO commands. The question mark at the beginning of a line causes the following prompt text to appear on the screen and waits for a [Y] or [N] keystroke. Yes means true and executes the statement after the text, a GOTO instruction in this case. With this feature and the additional free memory I need only these two configurations, *Windows* or other, to run all my programs.

DRDOS is compatible with different machines and third-party memory managers. The Release Notes booklet gives examples of how to use:
Intel 386 and compatible systems
Compaq 384 and 486 systems
Chips and Technologies-based systems
IBM PS/2 with Expanded Memory Adapters
Windows 3.0 (for 286 and 386 machines)
Qualitas *386^MAX*
Quarterdeck *QEMM386*
Quarterdeck *QRAM* (with Intel Above Board).

I took my configuration for *Windows* straight from the Release Notes and found upon tinkering that the recommended configuration works, but my own attempts at loading high other devices failed.

Quick Reference

DRDOS comes with a laminated quick reference which I find useful in figuring out the various new switches on commands. Most of the time I use the /h help switch to show the options of unfamiliar commands. The card does not contain device driver configurations, which I first missed, but then found I would not use them on an everyday basis, anyway.

I rate the documentation excellent.

Installation and Use

Manuals frequently remind of it, and experience dictates "Keep a backup", so I did that first. Fortunately, I did not need to restore anything. DRDOS installed and ran as described and is well behaved enough to rename the old CONFIG.SYS and AUTOEXEC.BAT files, then set up its own files.

The setup program guides you through configuration, asks for mouse and other options, and leaves a "plain vanilla" working DRDOS. I wanted to fathom its abilities and tried to "optimize", but found there was not much I could do but to add the optional *Windows* configuration code to CONFIG.SYS. In this aspect it works similar to Quarterdeck's *QEMM386* optimizer program. In both cases, my tinkering with the various memory details was basically a waste of time, except now I know what is going on above 640 kB and I learned to read the hexadecimal memory notation. This proved helpful later when I tried to optimize my office machine, which uses the memory hogs Token Ring and PC-LAN. Reading those IBM manuals again after having seen the DRDOS manual left me puzzled once again. IBM presents (rather throws at me) its information in an unorganized way, sorry to say.

After a few weeks of using most of my programs under DRDOS, I have found no incompatibilities on my home computer. Suffice it to say here that DRDOS works fine on my office machine, too, but it does not release enough base memory to use both a cache and *Framework LAN* together. The manuals do not say how to get the Token Ring and PC-LAN code into memory beyond 640 kB, and my attempts have failed so far. Probably, I must use *NETROOM* or something like that, which means another manual, more hours of booting the PC, and figuring out the right setup.

Before ending, I want to add a comment not related to DOS, but to languages and the user interface. Being German, of course I run into German versions of popular programs. Most of the user interface texts I find awkward to horrible. I understand Germans learn better if explanations in on-line help and manuals are German, but why the user interface?

First, any of the convenient shortcuts which rely on the first letter of a menu option go haywire at once if you switch versions. This means reprogramming of macros to complement the work the software producer felt urged to do.

Second, most of the functions are new anyway, that is, they occur as such only on the computer. Some are similar to other professions, e.g. printing, and use their lingo for briefness.

Why on earth do we have to learn a new German buzzword instead of an English one? For my part, I do not use any German software version.

I admire how the Japanese have adopted a technology that was once new to them: cars. They simply retained most of the technical terms. Even today "kurachi" in Japanese sounds like "clutch" in English and "bureki" sounds like "brake". I had a laugh the other day when a motorbike shop clerk pronounced an exhaust pipe: "Ekipai".

Back to DOS—what it should have been long ago is what DRDOS delivers. If you know a few basics, it is easy to understand and consistent, see executive summary above. Give DRDOS to a beginner after a basic computer course like "How to operate a Computer" (by Mastertech), and soon you will have a person using the operating system with confidence. Then you train him on the application and you can be certain if you ask him to send you a copy of his floppy disk with files you are not going to receive a plain paper copy of his floppy. ❑

DR DOS 5.0
Digital Research Inc.
70 Garden Court
Monterey, CA 93940
U.S.A.
Tel. (408) 646-6464
Fax. (408) 649-8209

How to operate a Computer
Mastertech Computer Products
P.O. Box 110427
Campbell, CA 95011-04
U.S.A.
Tel. (408) 379-9579
Fax. (408) 379-2830

Performance Analysis Software for IBM PCs

By J.A. Parsons

Reprinted from the March 1990 issue of Big Blue & Cousins, from the Greater Victoria Personal Computer User's Association, Canada

My first thought when I received the club's evaluation copy of Personal Measure was that it was the long-sought-after program that was going to analyze my behavior and get my personal life under control. Not quite. Personal Measure is a program that analyzes the performance of hardware and software on an IBM-PC running MS-DOS or PC-DOS. As you go about your normal tasks, Personal Measure is there in the background collecting data on the use of hardware by each program that you run. Later these data can be analyzed, graphed, and printed in a number of ways.

The program comes on a single diskette and has a 58-page manual that adequately describes how to use the program. Installation was a breeze: create a subdirectory on the hard drive and copy all of the files from the diskette to that directory. Done. No need to fuss with the AUTOEXEC.BAT or CONFIG.SYS file unless you're running other TSR programs that might conflict.

Once installed, the program is activated by PMEASURE /ON. From that point until you execute PMEASURE /OFF most processor, disk, keyboard, printer, and auxiliary equipment are logged into a labeled event file. All of this happens almost unobtrusively. The TSR does steal a few CPU cycles doing its task, and from time to time the drive lights up as Personal Measure stores data in the event file; but, for the most part you don't know that it is there.

Once I got the program installed I wondered what I might do with it. I turned to the manual and read the chapter that describes how to use the program and what the data mean. Frankly, when I finished reading the chapter I was still wondering how I might benefit from using the program. Skimming the manual I discovered that Page 1 listed the program's purposes:

An individual PC user can tune the configuration of a PC with the information reported by Personal Measure, again and again.

Evaluators of software packages can use Personal Measure to determine accurately which resources the packages use and how they spend their time.

Value-added resellers and system integrators can determine the most cost effective hardware configuration for a turnkey solution by measuring their applications.

Consultants can better serve clients with the valuable hardware and software performance data.

Evaluators of PC hardware systems can make informed judgments with the reports provided by Personal Measure.

People who provide support to a group of PC users can determine when someone needs to upgrade a PC, and figure out what the best upgrade is.

Developers and testers of PC software can use Personal Measure to assess overall performance of a product.

Administrators of local area networks can compare how individual PCs access LAN drive and hard disk drives.

Sitting here with my true blue IBM-XT that has been tweaked to maximum performance (V20, EMS, disk cache, faster disk, reduced memory refresh time, etc.), I attempted to use the program for Purpose #1. I will comment on the other purposes later.

Purpose #1: Tuning Your PC. My test involved doing three simple dBASE III+ COUNTs of a 60 K, 299-record database file — once with and once without my disk cache operating. The dBASE session consisted of these commands executed from the dot prompt:

```
.use \isb\prog\studata
.count
.count
.count
.quit
```

Table 1 on the next page shows the results of the test with the cache off. The whole operation including the loading of dBASE III and my key presses took nearly 42 seconds, and almost 28% of that was consumed with disk time. The lower portion of the table shows that there were 401 DOS accesses and 468 BIOS accesses, and that the average BIOS time was almost 25 milliseconds. Not bad for an XT, eh? Note too that I'm the most efficient part of the system grin.

Next, I activated the disk cache (Datamorphics DiskCache in 1.2 MB of LIM 4.0 EMS memory) and repeated the test. The results are shown in Table 2. The whole operation took over 43 seconds and 22% of that was disk time. The lower portion of the table shows that there were 163 DOS accesses and 222 BIOS accesses and that the average BIOS time was near 43 milliseconds. Note that the cache seemed to speed up my typing a bit...grin2.

These results surprised me. First, they suggest that things take longer with my disk cache operating, even though the disk time is shorter! Strange. But these data do confirm a suspicion I have had for some time: disk reads and writes are slower with a disk cache THE FIRST TIME. In this case my machine had to read in the dBASE III program files (and store them in the cache), and read through the database file three times as it performed the COUNT command. During the first COUNT the database file was read into the cache. With subsequent executions of the COUNT command, dBASE was able to use the cache-stored data. Personal Measure's graphical presentation of the data showed this nicely.

Reading the manual showed that cache operations are not treated as Disk operations, but as Processor activity. Comparing the two tables we see that there was nearly 4 seconds more processor time when the cache was on than when it was off. Thus, with the cache on less time was spent on SLOWER disk operations, and more time was spent on processor activity. The slight difference in Keyboard time simply indicates my typing variability. It seems that this particular task is faster without the cache, but the cache saves wear and tear on the drive.

My next test was to look at performance of the above test with everything already loaded into the cache (dBASE files and the database file). Table 3 on page 8 shows what Personal Measure reports. As you can

see, when all true disk accesses are eliminated, total time is reduced substantially. It is interesting that Processor time is also reduced slightly. My typing is also improving!

What did I learn from this exercise? I learned that my disk cache software actually slows down initial reads from the hard drive, presumably because storing the data in the cache takes time. When a program is going to access data once only (as when a program is read into memory for execution), the cache may slow things down. But when a program

or data are accessed a second or third time, having the cache operating saves time.

OTHER PURPOSES I'd like to comment briefly on the seven other purposes claimed by the publisher.

Purpose #2: Software Evaluation. The data presented by Personal Measure are not apt to be the basis for software evaluation. In the rare case that two programs produce similar outcomes using different resources, then the program might be useful. For example, I have heard that the QMail Door does a lot more disk thrashing than the MarkMail Door. Personal Measure might confirm this.

Purpose #3: Hardware Integration. The licence for this software is for one machine, making this purpose illegal unless one uninstalls the program with each use. This kind of utility software should be licenced to the user for multiple machines.

Purpose #4: Consultant's Use. Same as above. Can you imagine buying a copy of this program for each client? Perhaps that is the reason for their bulk order discounts?

Purpose #5: Hardware Evaluation. Same as above.

Purpose #6: PC Users Support. Same as above.

Purpose #7: Developer's tool. Personal Measure might be useful as a developer's tool. However, the performance data of Personal Measure does not provide the kind of information that would be useful to fine tune a piece of software. In my example, what is it about my disk cache driver that slows down disk reads? Personal Measure only gives gross measures instead of a procedure-by-procedure profile. If Personal Measure did assess performance on a procedure level, the program would be superhelpful.

Purpose #8: LAN Administration. I cannot comment on this purpose. I am suspicious of its value on a network, however, since testing software on a different drive gave screwball numbers on the bottom part of this table. The manual warns of this problem, but the software still reports the unreliable data.

SUGGESTIONS The manual has one chapter devoted to improving the performance of your computer, and another that evaluates benchmark software. Perhaps a later version of Personal Measure will provide system-sensitive suggestions for improvement and come with a standard benchmark for testing system resources.

Publisher: Spirit of Performance, Inc. 73 Westcott Road, Harvard, MA 01451
(508) 456-3889
Prices: 5.25" US$69.95, 3.5" US$74.95. Quantity prices available.

TABLE 1: dBASE III COUNT 3 TIMES WITH CACHE OFF

System Resources Used

RESOURCE	TIME hh:mm:ss.sss	PERCENTAGE OF TIME
Processor	26.285	62.90
Disk	11.599	27.76
Keyboard	3.901	9.34
Printer	0.001	0.00
Auxiliary	0.001	0.00
	41.788	100.00

Disk Activity Summary

TYPE OF ACTIVITY	DOS CALLS	BIOS CALLS	DURATION hh:mm:ss.sss
File Reads	395	414	9.543
File Writes	0	0	0.000
Programs Loaded	1	43	1.650
Directory Accesses	5	11	0.406
Non-DOS Accesses	0	0	0.000
Total	401	468	11.599

Average BIOS disk access time is 24.785 ms.

TABLE 2: dBASE III COUNT 3 TIMES WITH CACHE ON

System Resources Used

RESOURCE	TIME hh:mm:ss.sss	PERCENTAGE OF TIME
Processor	30.240	69.87
Disk	9.566	22.10
Keyboard	3.472	8.02
Printer	0.001	0.00
Auxiliary	0.001	0.00
Total	43.281	100.00

Disk Activity Summary

TYPE OF ACTIVITY	DOS CALLS	BIOS CALLS	DURATION hh:mm:ss.sss
File Reads	161	177	6.555
File Writes	0	0	0.000
Programs Loaded	1	4	22.853
Directory Accesses	1	3	0.159
Non-DOS Accesses	0	0	0.000
Total	163	222	9.566

Average BIOS disk access time is 43.090 ms.

TABLE 3: dBASE III COUNT 3 TIMES

WITH CACHE ON ALL FILES PRELOADED INTO CACHE

System Resources Used

RESOURCE	TIME hh:mm:ss.sss	PERCENTAGE OF TIME
Processor	25.049	89.75
Disk	0.000	0.00
Keyboard	2.875	10.24
Printer	0.001	0.00
Auxiliary	0.001	0.00
Total	27.908	100.00

Disk Activity Summary

TYPE OF ACTIVITY	DOS	BIOS	DURATION
File Reads	0	0	0.000
File Writes	0	0	0.000
Programs Loaded	1		00.000
Directory Accesses	0		00.000
Non-DOS Accesses	0		00.000
Total	1		00.000

No BIOS disk accesses were done during this measurement interval.

Flowcharting

Heinz Ito finds it as easy as A B C

"*ABC Flowcharter* is the flow diagram and organization chart program specifically designed to take advantage of today's high-speed, graphics-based personal computers".

In the May 1990 issue of TPC Newsletter, I reviewed two programs for flowcharting: the *Windows*-based *RFFlow* and the stand-alone *EasyFLow*. At that time I favored the program running under *Windows*, which was still in its 2.x incarnation. Since then, several *Windows* 3.x-aware flowcharting programs have come out. This was reason enough to look closely at one more program in this category.

Why flowcharting programs? or rather, who benefits from such programs? The first purpose that springs to mind is documentation of programs and technical systems. That's where my main interest lies. These programs are equally suited for organization charts, office procedure guides, and similar applications.

How does *ABC* measure up to the two older programs?

ABC Flowcharter arrived in a fancy box which contained plenty of air, two floppy disks, and a thin albeit well-made manual. Everything looked very professional.

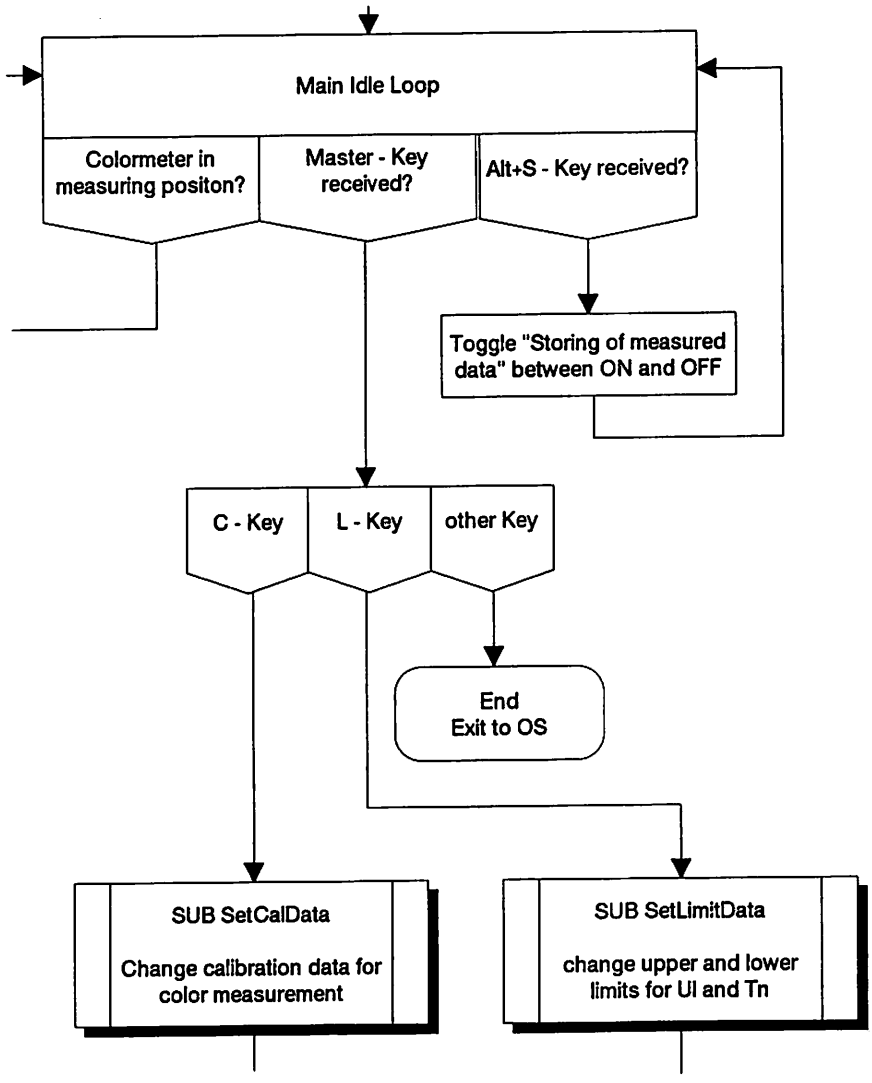
It offers all the features which nowadays are standard for such programs: automatic shape sizing, line routing and shape alignment, grids as alignment aids, multiple page charts, and the ability to import graphics and use them as customized shapes. Other major features include multi-dimensional charts, master items which appear in any chart, shape numbering, proportional screen fonts, and various customization capabilities (colors, patterns, shadings). It has access to all the output devices *Windows* supports, among them Postscript printers and HP plotters. Plotters come in handy when bringing large charts to paper.

OK, let's see what the program does. I redid the documentation of an automatic test system which I had previously generated with *RFFlow*. It does look nice. It did not save time.

One reason for this is the lack of speed of the program. To use it efficiently, you need one of "today's high-speed [...] computers", as the manual states in its "Welcome" section. Loading *ABC* takes twice as long as loading *Excel 2.1* and almost twice as long as *Word for Windows 1.1* on my 286 system with 2.6 MB of memory running *Windows 3.0* in standard mode. The all-too-frequent screen redraws are slow as well, and printing the complete 4-page chart takes almost 8 minutes with a LaserJet II.

Let's make a new chart. The palette window displays available shapes in the upper right corner of the screen. Pick one shape with the mouse and position it anywhere on the screen. Altogether, 30 different shapes are offered. As some of them are rather specialized, I occasionally lacked variations of the basic shape types. Other programs offer significantly more shapes.

No problem, I thought. You can import graphics for use as custom shapes. It is easy enough: All you have to do is copy in the graphic in *Windows* metafile format via the clipboard. Well, importing a shape from *RFFlow* did not work out: *ABC* would always mutilate the shape by cutting off parts of it. I ran



into no such problems when importing the same shape from *RFFlow* into *Word for Windows* and *Windows Write* using the same procedure.

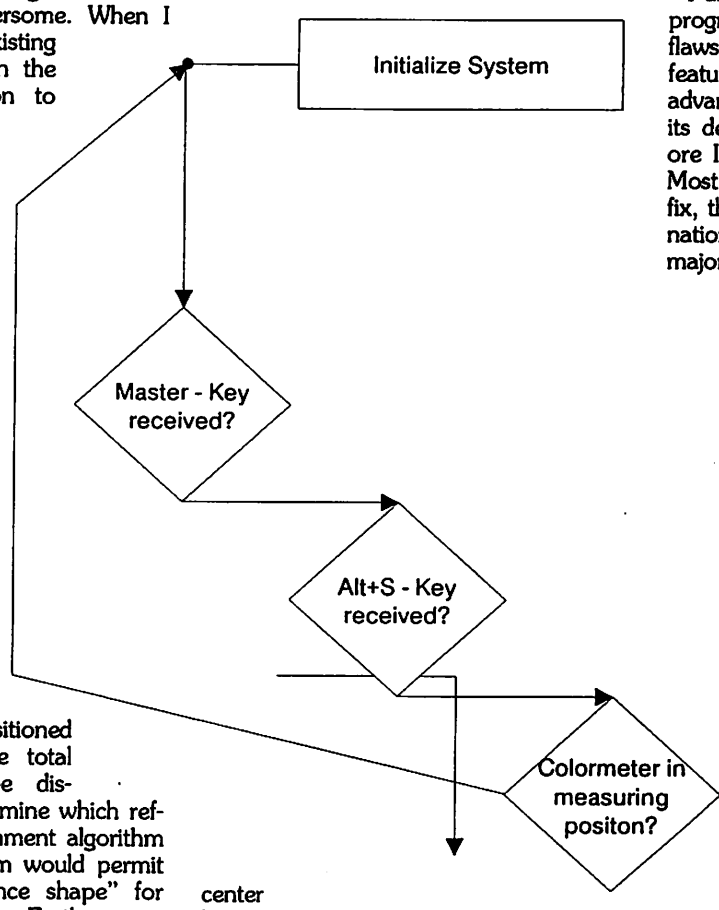
Once you have several shapes on the screen, it is time to align and connect them. You can connect them manually or use one of the three automatic routing options *ABC* knows about. Shapes can automatically be aligned horizontally and vertically, or just spaced, if you don't want to align them.

The alignment and routing algorithms more often than not produce strange results. Letting the automatic algorithms run while using automatic spacing (distance between shapes = 0) and routing leads to an unexpected result.

Both automatic functions suffer from serious problems. The alignment function is especially bothersome. When I added shapes to an existing chart and tried to align the new shapes in relation to one of the already positioned shapes, quite often the total chart layout would be disturbed. I could not determine which reference position the alignment algorithm uses. I wish the program would permit us to define a "reference shape" for consecutive alignments. Furthermore, the automatic spacing doesn't allow for partial overlap of the shapes. Automatic routing sometimes produces quite unexpected results as well. Rectangular lines would change to diagonal ones, and lines would not necessarily begin at the edges of, say, the rhomboid decision object. It is difficult to predict just where the line will begin or end on a shape's borderline.

Manual operation is hardly less troublesome. My biggest gripe is that you cannot use the keyboard to move objects. A mouse is fine for coarse movements, but for fine placements it becomes increasingly difficult to avoid involuntary horizontal movements when you want to move vertically only. This is aggravated by the fact that *ABC* doesn't provide a magnification view of your chart, only actual size and two different overviews. Here, too, other programs fare significantly better. Building a cluster of shapes which makes up a main idle loop and multiple decision object was an extremely tedious and time-consuming process, and the result still isn't perfect. I didn't manage to get rid of a double vertical line.

There are several more irks and quirks in this program. To just name one: I didn't find a means to automatically center horizontally the chart title. To me it seems like Roykore concentrated too much on adding various extras and features and lost sight of the necessities for basic chart designs.



On the other hand, an interesting feature is the capability to build 3-dimensional or even multi-dimensional charts: you can combine charts into documents in such a way that when you point to a shape in one chart, the linked chart will be displayed automatically. This is great for on-screen tutorials. I used this feature in my documentation as well. When you click on one of the shapes with drop shadow, the flowchart of the respective subroutine is displayed.

It is less practical, though, when working with hard copy: there is just no way to click on a sheet of paper....

Those of us who use bilingual machines might be interested to know that *ABC Flowcharter* runs and prints without problems on an AX machine in English mode. It doesn't run under the Japanese version of *Windows 2.1*. In particular, printing and inputting kanji cause problems.

I am somewhat disappointed with this program. It suffers from several irritating flaws in the implementation of its basic features and from its lethargic speed. Its advanced features cannot make up for its deficiencies. I tried to contact Roykore Inc., but my fax went unanswered. Most of the problems should be easy to fix, though. The version I tested is International Version 1.13. Wait for the next major upgrade. ❑

ABC Flowcharter
Roykore, Inc.
2215 Filbert Street
San Francisco, Ca 94123
Tel. (415) 563-9175 Fax: (415) 563-0836
US$295

Drive Type Tables

by Emerald Jones

Reprinted from the September 1989 issue of "Ctrl Alt Del", the newsletter of The UCLA PC Users Group

Every hard drive is assigned a "type number" that refers to a hard drive's size and its logical and physical characteristics. All drives have a certain number of read/write heads, cylinders, and a few other specifics that dictate its capacity, landing zone, "pre-compensation," etc. The type number is a short-cut so that you can tell your PC what drive is installed so that it can be formatted properly. Otherwise, there'd have to be some way for you to input all these numbers. Put in the wrong type number and you'll lose access to some or all of the drive.

Until recently, type numbering was a pretty good system, but it's fallen victim to progress. During early XT and AT days, when it appeared that PCs were here to stay, IBM assigned drive type numbers to different size hard drives that were included in its systems. Eventually there were about fifty type numbers. Since cloners were out to grab a chunk of IBM's business, they

adopted the same drive type numbers for their systems and hard drives.

A BIOS on the XT controller carried the drive table. Beginning with the AT, the drive table was put in the system BIOS. So, during the formatting of your hard drive, you told your system that you were installing a Type 6 drive. From that number, the system knew that the drive had four heads, 615 cylinders, and 17 sectors per track (as all MFM drives) and would format the drive to 21,411,840 bytes, or 21.4+ megabytes.

The math? 4 x 615 x 17 x 512 bytes per track = 21,411,840 bytes

For a while, some drives came from the manufacturer with the type number written on the drive housing. Then came RLL formatting with 26 sectors per track. The industry stretched to accommodate these parameters. About the same time, manufacturers stopped imitating IBM BIOSes and went them at least one better with more sophisticated BIOSes. Drive controllers appeared with augmented drive tables in their own controllers.

As new hard drives were made that IBM had no piece of, drive type numbers became a "best guess" affair. On top of that, a bunch of weird drives started appearing: removable drives or drives on controller cards, for example. Most recently, large capacity ESDI and SCSI drives are being installed in PCs which require their own utilities to format.

But it appears that no one has a handle on drive types anymore. Yes, each AT BIOS has a drive table, as does the controller BIOS; however, what maybe a Type 24 in one system may easily be a Type 36 in another, based on the drive table in a given BIOS. If the system or controller BIOS has no matching type number, the problem Paul Gibson experienced with the Compaq Deskpro, the type definition of the next "smaller," most similar drive must be used, with a corresponding loss of capacity.

The solution? Consider getting a utility that interrogates your BIOSes. To use it, you must know how many heads, cylinders, tracks per sectors and bytes per track to which your drive can be formatted. This information is available from the drive manufacturer. Western Digital and Tandon Computers both have utilities for this computation, at least for MFM and RLL drives. Ontrack, Golden Bow and Speedstar utilities help identify the drive as well as format it. But know that if you upgrade to bigger and better and faster, and I bet you will, formatting your drive may be more of a, um, challenge.

[From Paul Gibson, HAL-PC]: Western Digital has a BBS in Dallas with a great listing of hard drive statistics, downloadable user manuals for all WD controller cards, and several nice utility programs including one that will read your BIOS's drive table and display it. The number is 214/991-6803.

Blick in die Zunft

Geklebt! Geklebt! denn flüchtig ist das 7-11!

Bald ist ein JAT dahin!

Kein Kunde muss vor der Ur/Kunde ausscheiden!*

Ihm nutzen ist Schwachsinn!

Wie lange noch: dann ist man am Ändle—

Wohl dann: wenn man geklebt!

Und wenn man nicht beim Seifenländle—

Seine Pfeife auspfeifft!

O laßt uns stets an jene Weib gedenken—

Sie ahnen—welch ein Glück!

Keine Schanke kann so viel Wonne schenken

Als so ein Augenblick.

——

* „Kein Kunde muss laut Kunde ausscheiden" hat auch kein *r*.

What follows is from one of Spain's foremost poets, Antonio Machado. Remembered it as Wolfgang mentioned *Seifenspiele.*

Amo los mundos sutiles,

ingrávidos y gentiles,

como pompas de jabón.

Me gusta verlos pintarse

de oro y grana al volar;

bajo el cielo azul temblar;

súbitamente quebrarse.

For I love these subtle weightless graceful worlds, like soap bubbles. I love to watch how they paint themselves gold and pomegranate as they fly; how under the blue sky they quake and suddenly burst away.

Doch liebe ich diese schwerelose, gemütliche, wie Seifenblasen hauchdünne Welten. O wunder wie sie sich mit Gold und Granat unter den blauen Himmel zückend plötzlich zerblasend im Vorbeifliegen schmücken!

— José Aparicio Verdoy

Another disparition

The German poet Gottlob Burmann (1737-1805) in 1788 published a volume with 130 poems which do not contain the letter *r*. In fact, he hated the *r* so much that after publishing this work, until his death, he reportedly never uttered a sentence containing that letter.

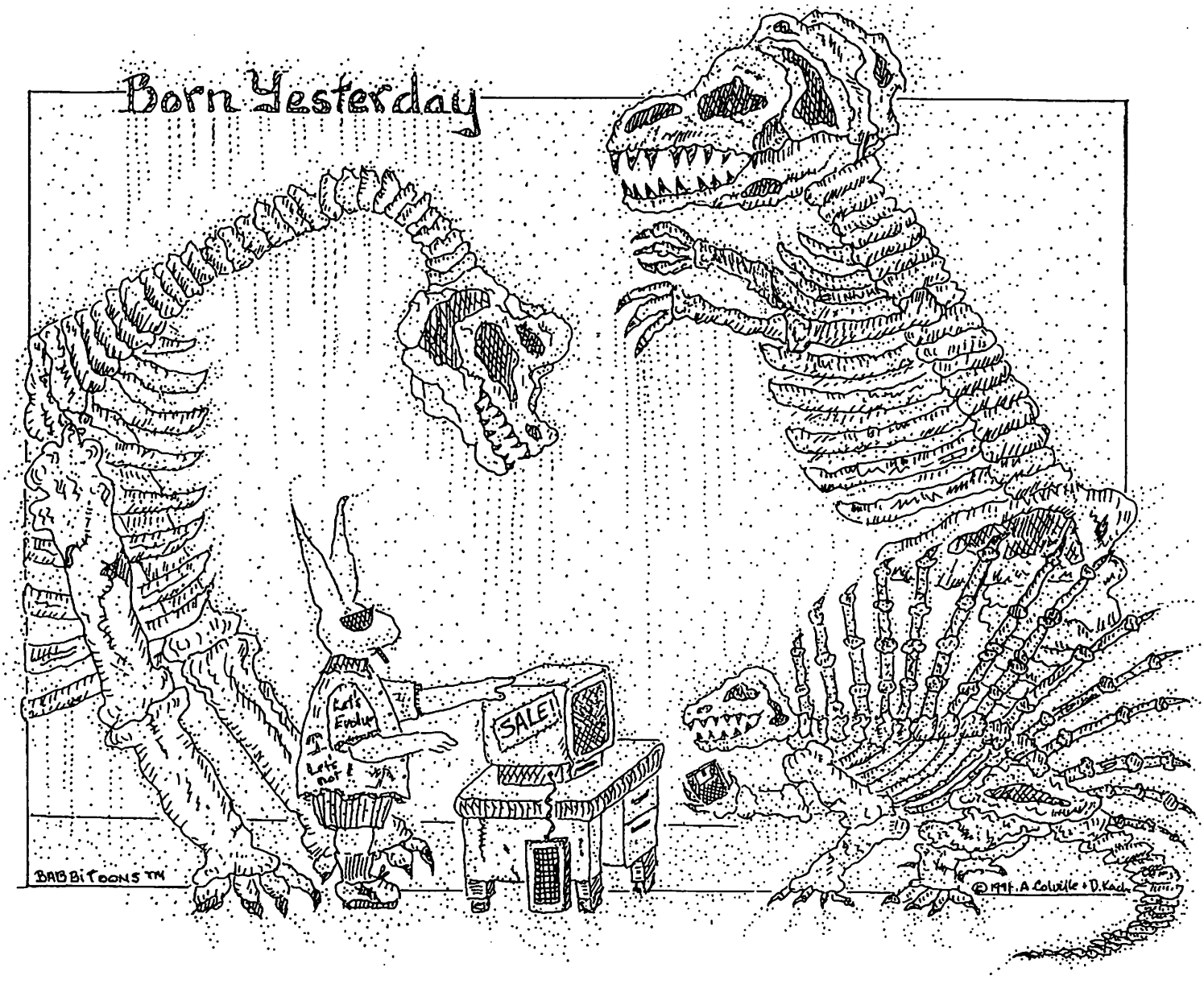
ZEITmagazin offers the following sample:

Blick in die Zukunft

Gelebt! Gelebt! denn flüchtig ist das Leben!
Bald ist ein Tag dahin!
Kein Augenblick muß ungenützt entschweben,
Ihn nützen ist Gewinn
Wie lange noch: dann ist man an dem Ziele—
Wohl dann: wenn man gelebt!
Und wenn man nicht beim Seifenspiele
Aus Welt in Welt geschwebt

O laßt uns stets an jene Welt gedenken—
Sie ahnen—welch ein Glück!
Kein Diadem kann so viel Wonne schenken
Als s o ein Augenblick.

"Babbitoons" ™ © 1991 by A. Colville & D. Kach



Protocol, Schmotocol!

Don't These Modems Know How to Talk to Each Other?

by Edward J. Zawlocki

So you're ready to invest your hard-earned cash in a modem? If so, you'd better brush up on the telecommunications lingo involved in these hunks of plastic, silicon, and metal. It's a veritable Babel out there!

Of course, if you buy the newest and most expensive modem, it should meet the latest standards. Then you can forget about this, right? Not quite, because you must tell the modem which protocols to use (or not use, usually) to get the highest, and most reliable, transfer rate possible in every situation.

Fortunately, modems and other communications devices have standards to follow. Otherwise there would be NO communications at all. For international telephone systems, CCITT (International Consultative Committee on Telephone and Telegraph) now sets connectivity standards. For modems, these standards are identified by the letter V, followed by a period and then a number (such as V.32). If the protocol has been revised, it is usually followed by the letters bis (a French term for second version).

So, how did these protocols come about? Way back in the dark ages of personal computers (a little over 10 years ago), there was the Bell Operating Company. At that time, "Ma" Bell ruled U.S. communications—by virtue of being the only telephone company. Since American equipment set the standards then, their modulation (or line) protocols, Bell 103 and Bell 212, were used. Somewhat later, CCITT deliberated and then set some international standards, starting with V.21 for full-duplex 300 bps modems.

Over the years, Bell was broken up into regional companies and any new standards they proposed never got going. But CCITT continued to formulate new protocols in response to changing hardware standards and public outcry. They eventually came up with V.32, another modulation protocol. This did not provide for error control, however, and since V.32 is very sensitive to telephone line noise and echoes, one was needed.

While this was going on, Microcom Inc. proposed, set, and licensed their own proprietary protocols, used in their modems. These, MNP2, 3, and 4, became de-facto standards, as there were none better, for the cost, at the time. These protocols are for error control, so they complement CCITT modulation protocols.

About 4-5 years ago, Rockwell International Corp., and other companies, produced the first chip to implement the V.22bis protocol. This is another modulation method, but for 1,200 and 2,400 bps modems. At that time, though, the chip was very expensive and was only used in very costly modems. They are now used in modems costing less than $200.

Around 1989, CCITT came up with V.22, for error control, and V.42bis, for data compression. These are hardware implementations that set the stage for today's high-speed modems. The latest actor is V.32bis, just recently approved, which extends the transfer rate up to 14,400 bps and has a faster re-negotiation protocol (less than 100 milliseconds). Look for this in the newest modems.

Is this the last scene in protocols? Probably not, as nothing has been set for ISDN or other possible enhancements to current transmission methods.

Protocols De-Mystified

Modem protocols fall into 3 categories, which you can choose from like a Chinese menu—one from each list—when initializing your modem, or you can let the modems negotiate them when connecting. But you must choose wisely, or hope the modems are smart enough. The three protocol categories are: Modulation, Error Control, and Compression. The most widespread protocols (some proprietary) are summarized in the following, which includes those used with cellular modems (for those people with modems in their cars).

[One note of caution on the compression protocols (MNP5 and V.42bis). Since most BBS files are already compressed, on-the-fly compression of these protocols doesn't increase throughput. In fact, MNP5 actually expands a pre-compressed file significantly while transferring it. V.42bis, on the other hand, monitors real-time data-flow and turns compression on and off as necessary. The moral of the story is: when transferring ZIPped (or other compressed files), turn MNP5 off.]

Modulation Protocols

Bell 103/113 apply to modem transmission speeds up to 300 bps (bits per second). It is an asynchronous full-duplex method.

Bell 212 (and Bell 212A) is also an asynchronous full-duplex method. However, it is for 1,200 bps modems, and can also accommodate synchronous transfers.

HST (U.S. Robotics' High Speed Technology) is a proprietary scheme for speeds up to 14,400 bps. Two different speed channels are used, the high-speed one and a 450 bps one in the other direction. Through negotiation of the modems, the high-speed channel is assigned to the one with the most data to transmit.

PEP (Telebit's Packetized Ensemble Protocol) is a proprietary method that dynamically compensates for line problems. It is a multi-carrier technology that analyzes line quality at 511 separate frequency points, and uses only the cleanest ones.

V.21 is a full-duplex scheme for modem speeds up to 300 bps. It is also used for Group 3 fax negotiation.

V.22 is a half-duplex, asynchronous scheme for 600 and 1,200 bps. It uses a second channel in the opposite direction, at up to 75 bps, for responses. It incorporates both LAPM (Link Access Procedures for Modems) and MNP4. LAPM has slightly better error recovery and reliability.

V.22bis adds full-duplex at 1,200 and 2,400 bps to the V.22 protocol. It falls back to V.22 on noisy lines.

V.32 applies to modem speeds of 4,800 and 9,600 bps. It is full-duplex.

V.32bis extends V.32 to 7,200, 12,000, and 14,400 bps. It also has an improved re-negotiation protocol that allows modems to change speed on-line without losing data or having to re-dial the system when conditions deteriorate.

Error Control Protocols

MNP2, 3, and 4 are proprietary, but licensed, methods to check for transmission errors. They have become worldwide standards. The numbers indicate different versions.

MNP10 is Microcom's proprietary protocol for cellular modems.

SPCL (from Spectrum Cellular) is a proprietary protocol used in cellular data transmissions.

V.42 is the international error-control protocol. It is backward compatible with MNP2, 3, and 4.

Compression Protocols

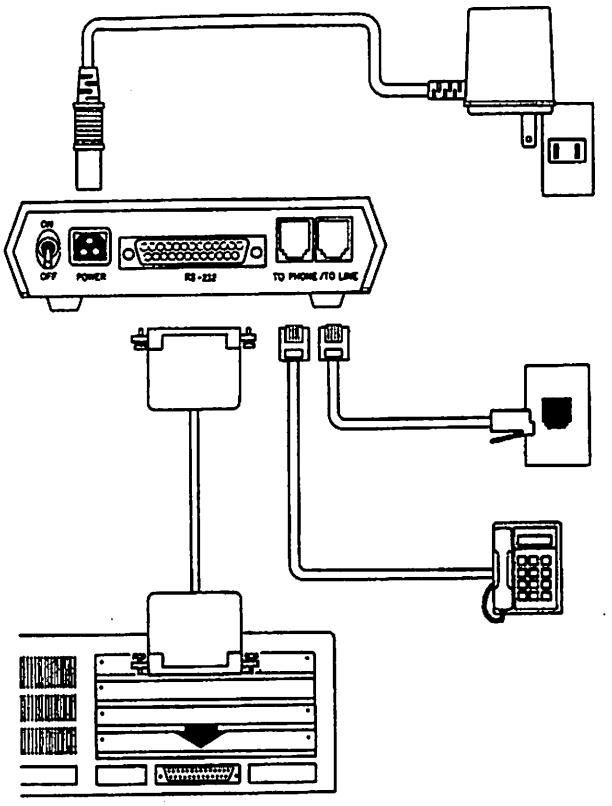
ITC-RM (Intelligence Technology Corporation's Reliable Mode) is a modified MNP5 method of compression and error-control. It is for cellular modems, and uses smaller block sizes (64-256 bytes, and as low as 16 when the connection is very noisy).

MNP5 and MNP7 are Microcom's proprietary, but licensed, methods of data-compression. They are used worldwide.

V.42bis is the international standard for compression. It uses a hardware implementation of the Lempel-Ziv compression algorithm to achieve 35% greater savings over MNP5. There is a potential throughput of 19,200 bps for uncompressed files with 9,600 bps modems. (With V.32bis, this rises to 57,600 bps.)

What You Should Do

So what is the best combination today? Since V.32bis isn't yet widely available, for a theoretical maximum throughput of 19,200 bps (for uncompressed files), it would seem to be V.32, V.42, and V.42bis—and a 16550 UART! Oh, yeah, and set your serial port speed to 38,400 bps. Think you can remember that? ❑



The Serial Port Blues — by Edward J. Zawlocki

The multitude of hardware/software transfer protocols may make you think it's necessary to have doctorates in both computer science and electrical engineering before using your modem. There's one more bottleneck in your quest to send that file as fast as possible. And that clog is in your computer, and in control of your serial port.

Every serial port is controlled by a UART (Universal Asynchronous Receiver/Transmitter). If this chip is not the latest design, you can't get the most from your high-speed modem, no matter what protocol you use. The original XT used the 8250 UART chip, which was replaced in ATs and clones by the faster 16450 UART. In normal (low speed) transfers these work fine, but crank up the speed and they start to lose it. The 8250 simply can't keep up with the data flow, and even the 16450 can drop incoming bits if the communications software has the CPU do a lot of disk transfers or screen updates.

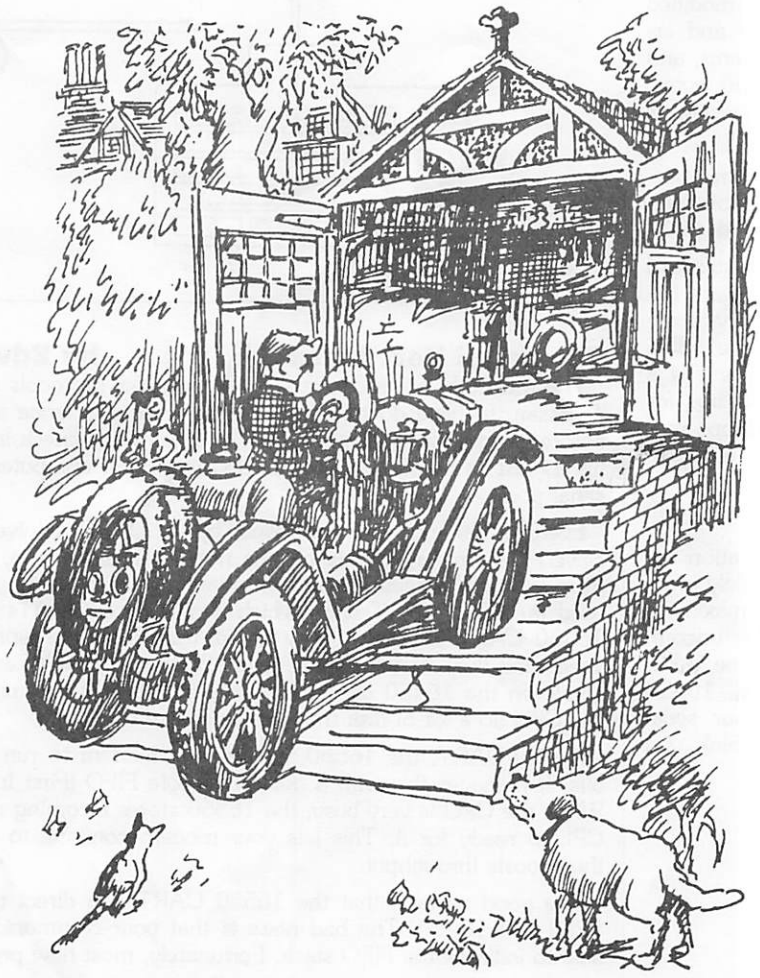
A new UART, the 16550, allows your modem to run full-tilt without dropping bits. It manages this with a built-in 16-byte FIFO (First In, First Out) buffer stack. When the CPU is very busy, the 16550 stores incoming data in the stack until the CPU is ready for it. This lets your modem continue to receive information, and thus boosts throughput.

The good news is that the 16550 UART is a direct replacement for both the 8250 and 16450. The bad news is that your communications software must be able to initialize the FIFO stack. Fortunately, most new programs do.

So check your motherboard (or serial port card) if you want to get the ultimate speed out of your modem. If your UART is in a socket, spend the $15-20 (¥2000) to buy a 16550 and replace it. For those with soldered-in UARTs, or UARTS integrated into other chips, this option may not be possible. Then again, if you're lucky, maybe your computer is already equipped with a 16550 or its equivalent.

One other way to ensure data integrity is to use the new Hayes ESP (Enhanced Serial Port), which incorporates the 16550 UART. This is a dual serial port board with an onboard coprocessor. The ports can communicate at speeds from 300 to 115,000 bps, and each has transmit/receive buffers that can hold up to 1 kB of data. When a buffer is almost full, the coprocessor sends an interrupt to the CPU and all the data is transferred to the disk at once. One drawback is that your communications program must be written to support it. ❑

On the road again



Bob Connelly talks from afar.

Small business has always been the poor relative of large business. It is nice to see some things coming along which bridge that gap. The portable computer is the greatest of these. I call it my "Great Equalizer".

I could write a multi-volume treatise on the subject, but not quite now. I am in hospital, recovering from pneumonia.

My first computer, bought in mid-1983, was a Tandy TRS-40 Model 100, with an internal 300 baud Bell modem and "hard-wired" communications software. I was able to plug the Tandy into the interface of a converted TELEX word processor (a 100 volt acoustic coupler) and upload data to the United States. But, oh, the constraints of 100 volt power.

Queries at a TPC meeting found people who were interested in the subject, but not much expertise. ("Message switching", as E-Mail was then called, was not legal in Japan until April 1983). I showed a wondering audience how to access an on-line database and upload and download messages.

My first experience "on the road" came at a convention of executives of American Chambers of Commerce. Being in Sydney was nice, but how to stay in touch with our fledgling business? E-mail on Dialcom brought about an introduction to the manager for Sydney, and validation to use the "Dianne" node.

Problem solved, I was able to communicate with the office using BT Gold, another node in Dialcom. Eager to demonstrate my new-found powers, I showed a number of executives how to use E-mail to save on the tremendous cost of sending TELEX messages. No sale! They were not yet in the computer age (most STILL aren't!).

After the convention, it was off to a resort in northern Queensland. One afternoon, back from the Great Barrier Reef, we signed on to read our mail. As wife Mary-Jane often said, "Here we were, 'hanging' off the Great Barrier Reef, sitting in our bungalow in the rain forest, Bob in his Bermudas, and Bob got an invitation to meet President Reagan!"

At the same time, I was asked to prepare a report on "Intellectual Property Protection in The Asia Pacific Region". By noon the next day! I pulled out the Tandy and a (first generation) portable Brother typewriter. The Tandy could send text to the Brother at 190 baud. Next morning, I started pounding away at the keyboard. I'd break from time to time and print out my meanderings. I couldn't meander TOO far in those days, the Tandy had only 32 kB of RAM, and part of that was taken up with built-in software, more with existing text files. After three drafts, I uploaded the report, deadline met.

As the years passed, I kept on using the Tandy when traveling. During part of a sojourn in Indonesia, I remained accessible to our staff in Tokyo. In Surabaya and Bali, though, I faded out of contact. (Today we could probably handle Surabaya and Bali with ease).

The situation in Thailand resembles that in Japan before April 1983, i.e. no "message switching", although use of Dialog and other information services is possible. However, I have signed on to Cable & Wireless' node in Hong Kong over a voice line from Bangkok.

Most nodes on Dialcom have installed CCITT X.400 standards. That's a difficult way of saying that Dialcom permits sharing of data between otherwise incompatible telecommunications systems. With this system, I can send a FAX to virtually anyone in the world who has a FAX receiver (no FAX receiving, yet). The X.400 standard uses "bit imaging", which means no distortion at the sending end since there are no feed rollers though which paper must pass. The messages are crystal clear and you never have to worry about misreading numbers.

About four years ago, Japan got its Dialcom node, called KDM, operated by

a joint venture between KDD and Mitsubishi Research Institute. KDM's delay in implementing the FAX interface means that I can't send you a FAX from within Japan with the ease with which I can do so via Dialcom or BT Gold. However, they do have what I call FAX "forced delivery" of electronic mail. For those IDs which are validated for the service, KDM phones the registered FAX number and delivers a FAX copy of the E-mail without the user having to sign on. So, when I'm abroad and want to reach the office without phoning, I use the "forced delivery" option. They get the message and, if they have a quick answer, they compose it off-line, sign on, and upload their reply. They don't even need to address it. It goes back to the sender, in this case, to me.

In California for Christmas, I took along a Dynabook. There was a glitch with the modem, so Toshiba referred me to Computer Products Plus, Inc., in Huntington Beach, California. While waiting for installation of a new modem, I spotted it in a display case. "The Road Warriors Laptop Toolkit". What, pray tell, is a "Road Warrior?" I quickly realized "I are one!"

Let me try to reconstruct the original inventory:

1 carrying case, with hook to hang in the closet or on the bedstead.

1 cable, about 12 feet or 3.6 meters, with RJ11 jacks on each end.

1 wire, 60 centimeters, with male RJ11 jack on one end and alligator clips on the other.

1 magnifier, illuminated.

1 knife, small, sharp, folding (hasn't been caught by airport security yet).

1 pair pliers

1 screwdriver, "minus" on one end and "plus" on the other (the only disappointment in the kit, the Phillips end is too blunt for screws in some phones).

1 coupler for connecting between two male RJ11 jacks.

1 connector, male RJ11 to duplex female RJ11 (I think it came with the kit).

The kit has a nice set of instructions from "Scenario 1: Try to Find a Modular Jack"; to "Scenario 6: Pay Phones". I'm sure CP+ won't mind inclusion of the set of instructions in the newsletter; they didn't put a "Copyright" notice on it (I'd honor it, remember the part about "Intellectual Property Protection in The Asia Pacific Region"? I was horrified by some of the "convenient ethics" expressed by at least one member in the April Newsletter).

Over the years, I've added extra goodies to the toolkit. There's a 25-pin null modem, one 25-pin and one 9-pin male/male gender changer, the same for female/female, and two 25-to-9-pin RS232C adapters. I don't need two, but where would I keep the other one without losing it?

Other purchases were an acoustic coupler and a "black jack", which turns out to have little use. It screws into the transmitter of an old-style phone, replacing the mouthpiece. It might work on a Japanese pay phone, but you'd probably need a large Stillson wrench to remove the other part and then the threads would probably be wrong.

Now, let's get down to connecting from the hospital. With some difficulty, I took the base unit of the telephone apart, and connected the red alligator clip to the red "spade connector" and the green to green. I plugged the RJ11 into the internal modem port. I turned the computer on, and edited a Command file, replacing ATDT with ATPT. I added an extra "0" to take care of pressing "U" to get outside. I put a couple of tildes after the "0". It didn't work. (Oh, I see what I did wrong, that should be ATDP.)

I tried putting some tildes between numerals in the phone number. That, too, didn't work. I tried a few more things, then gave up with the alligators. With some difficulty, I put the phone back together. I only have one part left over, and it's not too important (to me, at least). I then cracked out the CP+ acoustic coupler. I tried letting it dial the phone, with ATPT. It wouldn't dial. I tried using my unedited command file (ATDT for tone dialing), and simultaneously dialed the phone manually. The host answered, but no connect. I decided to try TPC BBS, it being more forgiving than KDM or Telenet (Ace Telemail). No luck, our BBS answered, but *Mirror III* kept saying, "Do you want to dial again (Y/N)?"

That did it. I got my telephone card, and pushed my bed table down to the hall to the pay phone. I strapped the acoustic coupler to the handset and placed them on their sides on a bath towel. I made a connect to Dialcom the first try, but with static.

I then tried our BBS, made a good connect, sent a garbled message to Martin, and then pressed "Z". The download looked good, with a fast 2400 baud flow rate. However, I noticed the open slots on the side of the transmitter. I thought, "That may be my problem with the garbage". I ran back to my room and got another bath towel. I placed it over the transmitter and covered most of the slots (all I could get at). Download continued without apparent problem. My telephone card was running low, so I put some ¥10 coins on the stand. When it got down to "1" I tried to put a coin in the phone. The male nurse, who had been attracted to all this fuss, said, "Kaado dake". I said, "Can I buy one?" "Iie, dekimasen". "Anata no denwa kaado o kashite kudasai" (May I borrow your phone card?).

He took off like a shot to get his card. When my card hit "0", the phone made its usual plaintive "beeps", which put some garbage in the text. I put in the borrowed card and completed the download.

Life goes on. While this "Road Warrior" is "grounded", I CAN attend to essential business affairs. Thanks to the "Great Equalizer". Thank you, IBM, for showing the way. Big business CAN be the best friend of small business. ❑

The View from The Trenches

Steve Bellamy

Steve Bellamy has been attracting increasing amounts of attention with his iconoclastic shatterings of the Computer Mythos. This month, we learn how "Nothing matters very much and few things matter at all"

Transcend and be productive

In my two earlier columns, I have tried to give some practical advice on how to make best use of the computer as a thinking tool. I know others, caught up in the "how" of computers, don't agree, but I'm only concerned with the "why" and not at all interested in the fashionable, time-consuming construction of complex "powerful" systems. Better systems are just better cages. Upgrade your mind, not your software.

A similar situation exists with members of photography clubs who spend a lot of time and money on better and better cameras with more and more amazing features. Beautiful photographs and beautiful painting begin with an alert, vibrant and totally free mind. The tools used merely help in the expression of concepts that already exist full blown in the mind's eye. The same is true of the computer. The deft craftsman may use the same tools for years and years but he evokes the very best from them by utilizing skill, experience, and insight.

Recombination of previous notes requires an idea engine. You have to write a script. You have all your material at hand, you have your computer primed and ready But where to start, and once started, how to maintain the elusive thing called "the flow".

Step 9. Look to your "answer book", the book that has all your jottings of ideas, plans, problems in it. Take the seemingly random data there and start to view it in different ways. For example, can I reverse this idea, make this idea larger or smaller, make it in black and white or in color. Pretty soon your synapses will be firing on all cylinders. This concept of creativity is discussed in several books (Six Thinking Hats) and demonstrated in the software program *Ideafisher*. The means may differ but the technique is the same.

Step 10. Measure your productivity not by asking an MBA but by how little you use your computer to achieve your goal. Less is more.

All about the fax

The fax was invented in the 19th century and, like the typewriter, hasn't changed much. Until E-mail becomes more accepted (easier) the fax will continue to bridge the gap between snail-mail and telephone tag.

I bought the original Gammalink fax board in 1986 and it worked fairly well. I was also using a voice mail board at the time and when I was offered an upgrade that included a 9600 baud fax and 2400 baud modem for $99 I took it. I'm glad I did. It's the Complete Communicator and the best multiboard around.

Some people have the Intel fax/modem board and think the same of it but I just don't know why. A fax board is a fax board is a....I'm interested in more productivity, not more features. Others may like playing around with things they don't understand (It ain't wot you do, it's the way that you do it—Louis Armstrong) but I'd rather get the job done and get on with enjoying life. The computer is just another tool—in the words of B.B. King "It ain't no big thing, baby".

The Complete Communicator is an elegant combination of fax/voice/modem and scanner on one board. Its intuitive mailbox system makes it the tool of choice for my communications.

The CC allows you to set up virtual mailboxes for voice/fax and modem communications. You can send and receive all three types as if they were files dropped into your mailbox. You can dial in from outside and have any type of file redirected to you wherever you are. It has a postscript driver so your faxes look pretty spiffy and you don't need a postscript printer to do it. If you leave your machine on all the time (see an earlier column) you can receive faxes, voice messages, and modem files 24 hours a day, in the background if you are working on the computer or on its own if you are out enjoying life or listening to Louis Armstrong. Its price is around $300 US.

Get this right.

The word "hacker" is and always has been a word used to describe unskilled amateurs in a professional business. The double bluff of now trying to make it sound like a badge of honor is a laugh. Jerry Pournelle likes to be thought of as a hacker. How true! Louis Armstrong would definitely have been a hacker.

Steve drops famous names section Part II follows

I teach aerobics. It's healthy, it's fun, and you get to meet such nice people (Maynard Hogg used to do aerobics). So there I was teaching this class in San Francisco when this guy in jeans and a rather off-color sweater swings by to pick up his wife/daughter/girlfriend, and we strike up a conversation. Seems as how he's into computers and stuff like that. What a coincidence. So am I. I was using a Lisa at the time, and I spared no expense telling him what a crock IBM DOS was and how crappy CP/M (copy B A) was. I really laid it out.

Soooo he just replied

"Yes, I know. I'm real sorry you had such problems, but when I wrote it I only meant it to be used by my friends and they could always call me up and ask me if they had any questions". Exit unknown man, stage left, followed by cries of "Who was that masked man?" Louis Armstrong, perhaps....

One More Time Dept

What follows was supposed to be in last month's column but I guess the four-page interview with my hero Wick Smith took precedence (he always wrote the longest BAT files and made the longest presentations too).

Sit down at your computer and type the following...

```
CD \
MD MAIN
COPY *.* C:\MAIN
```

and the next time things go wrong, just recreate things they way they were when things were right.

Well, golly gosh, you mean you don't run CHKDSK/F in your AUTOEXEC.BAT. I thought everyone did.

Formatting 3.5" disks, what a bore, especially if you have to check if this disk is an HD or a DD or an SD or an HC before you put it into the drive. I mean, after all, you have to be real careful because DD disks won't format for 1.44 MB right....Sorry, Computerland, wrong, just punch a hole in the left side of any 3.5" floppy and guess what! Ho-hum.

This month's column would not have been possible without the help, assistance, and spiritual guidance of Louis Armstrong, Bing Crosby, Perry Como, Mel Torme, Larry Adler, and Muffin the Mule.

Special thanks to Mrs. Armstrong for letters, photographs, table napkins, handkerchiefs, and assorted unpaid bills used in this tribute to one of the all-time greats. ❑

Technical Tips From the BBS

Larry Cisar

LHA is a great compression tool but it does have some idiosyncrasies. You can compress and keep subdirectories straight but the documentation doesn't clearly explain how to do this. Imagine you have a disk with subdirectories QUESTIONS, ANSWR, and WRONG. You need to create a compressed file that keeps the files in an appropriate directory. The disk is in drive B and you are creating the file on drive C where you are currently residing. Your command lines are

```
LHA A /X1 GRAM01 B:*.*
LHA A /X1 GRAM01 B:\QUESTIONS\*.*
LHA A /X1 GRAM01 B:\ANSWR\*.*
LHA A /X1 GRAM01 B:\WRONG\*.*
```

The option /X1 tells LHA that you want to keep the subdirectories as part of the file name. /X1 will not work if you do not put *.* at the end of each line. If you drop *.*, LHA will compress all the files without the paths.

Roger Boisvert

Larry, I'm not sure I understand what you were trying to do. I believe you were trying to show how to make a single LZH file containing the entire contents and tree structure of a floppy disk in drive B. I think you are doing it the hard way.
Instead of several command lines, try using a single command.
Larry's

```
LHA A /X1 GRAM01 B:*.*
LHA A /X1 GRAM01 B:\QUESTIONS\*.*
LHA A /X1 GRAM01 B:\ANSWR\*.*
LHA A /X1 GRAM01 B:\WRONG\*.*
```

Roger's

```
LHA A /R2X1 GRAM01 B:\
```

It took about two minutes browsing through the .DOC file to figure out how to do it. I am at this moment LHAing my entire Paradox tree structure, from drive E to drive D. It worked just fine with the following command, which archived the entire Paradox directory, and all subdirectories flowing from it.

```
LHA A /R2X1 D:\PARADOX.LZH F:\PARADOX
```

To unarchive the file, with tree structure intact, I used the simple command

```
LHA X PARADOX.LZH
```

The View from a Corporate Perspective

Roger Bolsvert

After a few hectic weeks, I had a massive pile of paper to clean up, and a few software packages I had bought or borrowed for testing purposes. A couple of weeks ago I tested *HyperDisk*, an excellent shareware disk caching program which has since become a standard on my J3100SX. This was followed by a flurry of testing, mostly designed to tackle three problems.

- *Problem 1*

The RESUME mode on Toshiba J3100SX and T2000SX computers does not work when the user has *QEMM* or *386^MAX* in config.sys. This happens even when the exclude feature of Microsoft's EMM386.SYS is used. How to work around this problem?

Toshiba's implementation of RESUME mode is one of the reasons users buy the machines. Only Panasonic makes a computer with a RESUME mode that rivals Toshiba. Toshiba's RESUME mode can maintain programs in memory for about one week as compared with only one day for most competitors' computers. RESUME allows you to switch off the computer in the middle of a spreadsheet or word processing document and to find it waiting for you when you power on a day or a week later. No need to reboot the computer, and no need to reload the software or the data file.

When the computer powers down, the built-in RESUME chip runs a sequence of steps prior to actually cutting the power. The RESUME function works only in standard mode, meaning that when 386SX, 386 and 486 chips enter enhanced mode, the RESUME sequence fails when power-down begins.

Six weeks of trying to solve this problem has ended with very little progress visible. I now have a pretty clear idea of what the problem is, what is required to solve it, how the solution will arrive. No solution is yet available, though I do expect one to arrive within the next 4 to 6 weeks. Any expanded memory manager powerful enough to have an EXCLUDE feature is likely to cause RESUME failure. Anything with Loadhi capabilities definitely causes RESUME failure.

A program called T386.EXE (available on TPC BBS) was jointly created by Toshiba America and Quarterdeck to help overcome some of these problems. T386.EXE, though, runs only under *Windows*. No solution works at the DOS level. Toshiba America is acutely aware of the problem, but Toshiba Japan has only just learned of it.

Toshiba America has been telling its BBS users that Toshiba MS-DOS 5.0 will solve the problem. I'm sure it will. But current owners of Toshiba machines shouldn't be forced to buy a new version of DOS to get a solution.

- *Problem 2*

The J3100SX comes only with a 20 MB hard drive, and I need just a wee bit more to work comfortably. How to expand the hard drive space or capacity?

My J3100SX notebook computer now runs more laps than my desktop computer. Partly because of that I have begun to use a lot of software on my notebook, and need to test a lot of software on it, both for my own needs and for users I support. Gotta have a larger hard drive. A third-party producer is supposed to release a 40 MB hard drive for these Dynabook computers "REAL SOON". I've grown tired of waiting, and while researching the RESUME problem, I saw many user references to a software and software/hardware combination called *Stacker*.

Stacker promises to double the size of your hard drive by compressing files on the fly. A 20 MB drive should be able to hold 40 MB of programs and user files. For a little more money you can get both the software and a hardware board to compress files even further.

After quite a bit of testing, I've decided to keep *Stacker*. While it didn't fully double my hard drive space, it did prove worthwhile. When I started, I had less than 1 MB of free drive space on the hard drive. Installation of *Stacker* produced about 11 MB of free drive space even after the addition of *Stacker* software.

Running *Scheck*, *Stacker*'s functional equivalent of *Chkdsk*, in effect partitioned drive C into drives D and E and produced the following reports.

```
Drive D is a 20 MB Stacker drive
Stacker Volume Statistics:

Stacker Volume  STACVOL File
Drive D:        C:\STACVOL.000
Total Bytes:    20,594,688  10,298,368
Bytes Used:     16,932,864 ( 82.2%) 8,145,408 (
79.1%)
Bytes Free:  3,661,824 ( 17.8%) 2,152,960 (
20.9%)

Sectors per cluster:        164

Volume Compression Ratio    = 2.1:1
Projected Bytes Free        = 3,661,824
```

Running *Scheck* on drive E produced the following report.

```
Checking contents of drive E . . .
No errors found

Stacker Volume  STACVOL File
Drive E:        C:\STACVOL.001
Total Bytes:    8,743,296   9,376,768
Bytes Used:     8,478,720 ( 45.2%)  4,900,864 (
52.3%)
Bytes Free:     10,264,576 ( 54.8%) 4,475,904 (
47.7%)

Sectors per cluster:   16  4

Volume Compression Ratio    = 1.7:1
Projected Bytes Free        = 7,659,520
```

Compression ratio depends on the type of file, which should not surprise users of *LHARC*, *PKZIP* or other archiving programs. This also explains why the software shows "Projected Bytes Free" instead of "Bytes Free".

I have noticed some slowdown caused by the on-the-fly compression of all files. A text search through a database file seems to take a little longer, but a sort seems to take no extra time at all. Most operations seem to take an extra micro-

second or so to get started, but after that nothing slows you down. I have found no software to be incompatible with *Stacker*, though Norton SI complained it could only report SI on a hard disk.

Stacker's device driver does take up some RAM, but just how much depends on how you configure it. Loading the program in high-memory is an option on most machines, but not on the Toshibas without giving up RESUME mode. Loadhi is the loser in a contest between Loadhi and RESUME. RAM overhead on my computer with 2 *Stacker* volumes is 42 kB. The second volume accounted for 3.3 kB, meaning that *Stacker* would take almost 39 kB with only one volume.

Any complaints? Yes, two. First, it would be a lot more useful if I had to give up only 10 kB rather than 40 kB. That's a tough one for the producer to solve. The other complaint should be easily solvable. Compaq DOS 3.31, DR DOS and MS-DOS 4.0 all can handle DOS partitions greater than 32 MB. *Stacker* refuses to let other versions of DOS create a partition larger than 32 MB, even if the version of DOS can handle it. Toshiba DOS can easily support 100 MB partitions; my Toshiba 486 has a single partition of 175 MB. But not with *Stacker*.

Stacker comes with several utilities. Probably the most useful of those utilities allows you to create a drive D that pretends to be drive C. With this mock drive designation, you can install the software without having to rewrite existing BAT files or adjusting most of your software.

All in all, a good temporary solution to the need for space, until 40 MB or larger hard drives become available for Toshiba computers. All my testing was done under Toshiba J-DOS, with no apparent conflicts.

- *Problem 3*

I sometimes use *Desqview* on my 25 MHz 386 machine at the office as a multitasking program, and sometimes only as a task-switching program, depending on how strong the need for speed is. The more I work, the less I find I need multitasking, but the more I need task-switching, the ability to change quickly from one program to another, say from *1-2-3* to *Paradox*, then to *Grandview*, and a quick dip to DOS to perform some file operations. On machines slower than a 25 MHz 386 I do almost no multitasking, but depend heavily on task-switching. What is the best task-switching program I can use with the J3100SX I've come to depend on so much recently?

One problem is RAM overhead. The inability to retain RESUME mode while using *QEMM* or *386^MAX* means little of lower RAM remains available after bootup, only 518 kB. My desktop Toshiba, with much more loaded, has 630 kB free after bootup.

Desqview is still my favourite, but I've had to give it up until I do some more research at the office. When not using high RAM, *Desqview* takes much more space out of the lower 640 kB. The maximum memory partition available for programs was 353 kB. With *Software Carousel*, I was able to get 503 kB free, with an overhead of only 15 kB per memory partition. *Switch-it* occupied the middle ground, 480.6 kB free for the largest partition, given that I couldn't load anything high. Of the three, *Software Carousel* easily won the contest for lowest overhead.

Both *Carousel* and *Switch-it* were reasonably easy to install and to adjust. Both easily handled the six programs I usually keep loaded under *Desqview*. Free use of Japanese DOS programs is another matter. *Carousel* occasionally gave me a little trouble with *GrandView*, while *Switch-it* had problems. In the end, *Desqview* and *Carousel* came closest, but crashed several times during testing.

Both *Carousel* and *Switch-it* allow use of extended, expanded, and hard drive space for memory. Hard disk space, though usable, makes for very slow task-switching. With some fine tuning, *Switch-it* ran all six of my programs without swapping to disk.

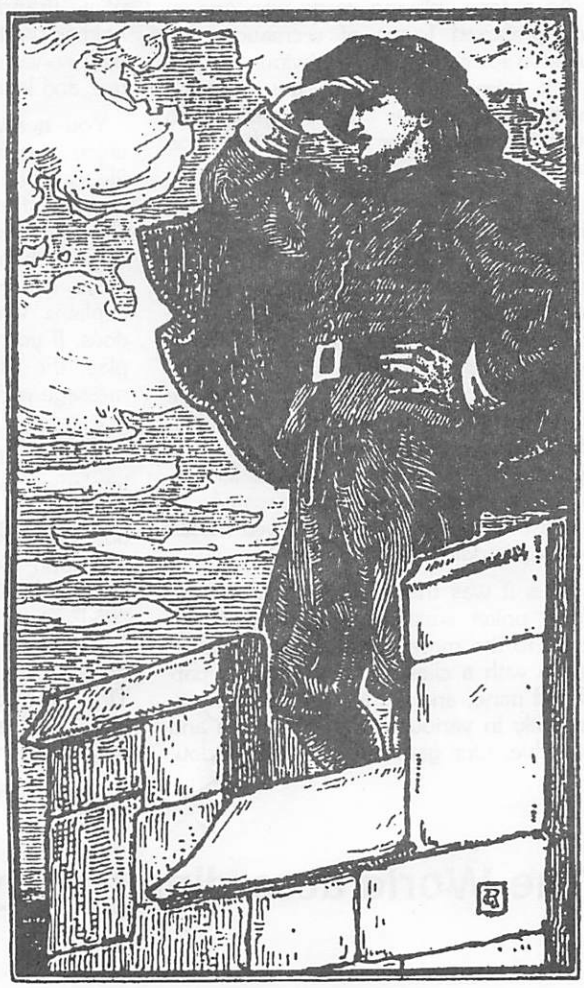
One hidden goal was to find a task-switching program that would let me switch easily between Japanese and English programs. That search is still on, but *Switch-it* did solve the problem without causing crashes using the proper setup. *Desqview /X* is supposed to handle "non-standard" video modes, and that may well solve the problem for *Desqview* in the future. For the time being, *Switch-it* seems to be a good program for Toshiba Dynabook users wanting task-switching and Japanese screen modes. Less than perfect, but it functions.

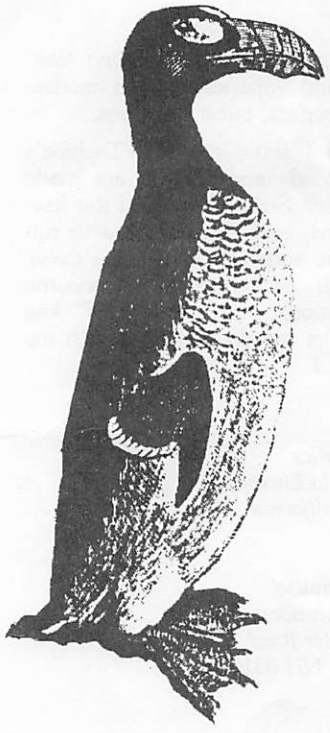
What did I settle on until Toshiba's RESUME mode and *QEMM* are made to cooperate? *Switch-it* caused the fewest problems, and did allow me to run all the same software as *Software Carousel*. Though *Switch-it* does consume more memory, overhead was low enough to let me do all I need with my computer. ❑

STACKER
Stac Electronics
5993 Avenida Encinas
Carlsbad, California
USA 92008

Software Carousel
SoftLogic Solutions, Inc.
One Perimeter Road
Manchester, NH 03103

Switch-it
Better Software Technologies, Inc.
55 New York Ave
Framingham, MA 01701
Phone: 508-879-0744
Fax: 508-872-1734





The World according to Hoyle

Wm Auckerman

When this month's newsletter shows up in your mailbox, I'll be (if all goes according to schedule) on vacation. Since my brain is already shifting into leisure mode, the theme for this month is card games.

As a teen, playing cards was one of my preferred forms of recreation. My passion for cards was so obvious that, as I left home for college, my mother's parting advice was: "Don't gamble with strangers, and never bet more than you can afford to lose."

She had good reason to worry. Even then, I recognized that I had a classic "addictive" personality. Had I started to gamble seriously, I doubt that I could have voluntarily stopped. Today I'd be either flat broke or a member of Gambler's Anonymous. (For the same reason, I seldom touch alcohol and have never dared to try drugs. In my case, Benjamin Franklin knew whereof he spoke when he said, "It is easier to suppress the first desire than to satisfy all those that follow." I have allowed myself only one addiction: computers.)

Thus it was that I avoided the nightly dorm poker sessions and gravitated instead to the more esoteric card games. I fell in with a clique whose interests paralleled mine, and we indulged almost exclusively in various forms of euchre and pinochle. Our game of choice was double deck pinochle. Almost every day would find a marathon game in progress in the fourth-floor lounge, usually with a spectator or two waiting patiently to sit in if one of the players should tire. (A couple of the more studious types would actually stop playing to go to class. I was not one of them, as my slowly sinking GPA clearly showed.)

But, as Abraham Lincoln observed, "And this, too, shall pass away." After graduation, my enthusiasm for pinochle remained, but rarely could I locate a sufficient number of like-minded friends to get up a game. So card playing became one of the youthful pastimes that I reluctantly abandoned.

Now, after well over a decade of abstinence, a solution to my conundrum has appeared. No longer need I find three humans to complete the "menage a quatre." With its casual acceptance of split personalities, my computer acts as both partner and opponents for double deck pinochle, thanks to PCPINOCL.ZIP.

I doubt that anyone reading this has ever played double deck pinochle. It is an obscure variant of auction pinochle which, as the name implies, uses two pinochle decks (without the nines): 80 cards total. Players bid for the right to name trump. After "melding" (points for holding certain combinations of cards), play consists of taking tricks. Each ace, ten, and king taken counts as one point.

You needn't be a fanatic like me to enjoy this program. The PCPIN.DOC file explains the rules of play and offers tips on strategy. The program offers a "learner's version" that allows you to view each player's hand as he bids and plays. An option in the learner's version explains why each player bids as he does. If you try to make an illegal bid or play, the program returns a brief error message explaining your mistake.

Aside from a couple of minor quibbles, I consider PCPIN.EXE to be an excellent implementation of double-deck pinochle. The computer's play is often predictable, but there are enough surprises that you can soon forget the other players aren't human. I miss the cross-table banter of "real" play, but several hours spent with this program has improved my rusty skills. (I wonder if I can convince three TPC members to download PCPINOCL.ZIP and learn to play so I can organize an all-human game again?)

One of the first card games that I learned was cribbage. It brings back childhood memories of rainy afternoons; while my father counted the cards (there always seemed to be at least one missing) I would get out the cribbage board and set up the pegs. Those memories may account for my special fondness for cribbage, and I'm glad that *Cribbage Partner* has taught my computer to play.

Hoyle's "Official Rules" calls cribbage "one of the best of two-hand games. It combines...the luck of the deal with opportunity for skill in discarding and play." If you've never played the game, I mention just enough to confuse you thoroughly. Cribbage is a two-player game and uses a standard deck of cards. Each player is dealt six cards, but "lays away" two to the "crib" to reduce his hand to four. After the dealer turns a "starter," each player exposes a card in turn. Points are awarded for combinations (pairs, triplets, runs, "fifteen," and "thirty-one") or "go." After all the cards are played, each player counts the points in the hand he was dealt: pair, run, flush, "fifteen," and "his nobs." The dealer gets to count the points in the crib. Score is kept by moving pegs along rows of holes in the cribbage board.

Cribbage Partner simulates all the paraphernalia of an actual cribbage game: cards, board, and pegs. It offers five options, each of which can be toggled between hands: regular play/demo; manual/automatic scoring; muggins/no muggins; prompt/no prompt; and game = 61 or 121 points.

The program provides informative prompts. If you're unsure what to do during discard or play, press "R" to see the computer's recommendation. The CP.DOC file explains the five options and provides a brief summary of the rules of cribbage. I highly recommend *Cribbage Partner* to pros and novices alike.

Now, if I could only find a good euchre program!

PCPINOCL.ZIP: Double Deck Pinochle; freeware ($0); Ralph Daugherty (no address listed)

CP20.ZIP: Cribbage Partner version 2.00; shareware ($10 contribution);